List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 15 (Cancelled).

16. (New) A pressure sensor, comprising:

a pressure measurement cell having an essentially cylindrical platform of a first diameter and a first thickness, and a measuring membrane of a second diameter and a second thickness joined to an end face of said platform;

an elastic sealing ring of a third diameter and a third thickness;

a support ring of a fourth outer diameter, a fourth inner diameter and a fourth thickness, with said support ring being securely connected with the end face of said pressure measurement cell facing away from said measuring membrane;

a clamping ring having a first engagement means;

a stiff decoupling element arranged between said clamping ring and said support ring; and

a housing for accommodating said pressure measurement cell, wherein:

said housing has an axial bearing surface for the seal and second engagement means, which engages with the first engagement means,

said pressure measurement cell is axially clamped between said elastic sealing ring, which is arranged between said axial bearing surface of said housing and the membrane-bearing end face of said pressure measurement cell, and said support ring, by means of said clamping ring, and

the dimensions of said support ring and said decoupling element are coordinated with the dimensions of said sealing ring and said pressure measurement cell such that a radial deformation of the membrane-bearing end face caused by axial clamping of said pressure measurement cell is so small, that the span error of said pressure sensor on the basis of a reduction of the axial clamping force by at least 10% amounts to not

more than about 0.02% and the temperature hysteresis of the span amounts to not more than about 0.03%.

17. (New) The pressure sensor as claimed in claim 16, wherein:

the inner diameter of said support ring is selected such that the span error in the case of a reduction of the clamping force by at least 20% amounts to not more than about 0.02%.

18. (New) The pressure sensor as claimed in claim 16, wherein:

the inner diameter of said support ring is selected such that the span error in the case of a reduction of the clamping force by at least 10%, or by at least 20%, amounts to not more than about 0.01%.

19. (New) The pressure sensor as claimed in claim 16, wherein:

the temperature hysteresis of the span amounts to not more than 0.02%, and especially preferably, not more than 0.01%.

20. (New) The pressure sensor as claimed in claim 16, wherein:

said platform and said measuring membrane are made of the same material, especially a ceramic material.

21. (New) The pressure sensor as claimed in claim 16, wherein:

said support ring and/or said decoupling element are made of the same material as the platform.

22. (New) The pressure sensor as claimed in claim 16, wherein:

said support ring has at least the thickness of said platform.

23. (New) The pressure sensor as claimed in claim 16, wherein:

said decoupling element comprises a decoupling plate.

24. (New) The pressure sensor as claimed in claim 23, wherein:

said decoupling plate has a diameter equal to the outer diameter of said support ring.

25. (New) The pressure sensor as claimed in claim 23, wherein:

said decoupling plate is not secured to said support ring.

26. (New) The pressure sensor as claimed in claim 16, wherein:

said decoupling element comprises a decoupling ring.

27. (New) The pressure sensor as claimed in claim 26, wherein:

said decoupling ring has about the same dimensions as said support ring.

28. (New) The pressure sensor as claimed in claim 26, further comprising:

means for minimizing friction provided between said support ring and said decoupling ring.

29. (New) The pressure sensor as claimed in claim 16, wherein:

the coefficient of static friction between said support ring and said decoupling ring amounts to less than 0.2.

30. (New) A method for the iterative optimizing of the dimensions of a support ring and a decoupling element for a pressure sensor which measures the pressure of a process media in liquid, gas or vapor form comprising the steps of:

determining a geometry for the support ring and for the decoupling element;

calculating a first span change of the pressure sensor under a first axial clamping force;

calculating a second span change of the pressure sensor under a second axial clamping force;

determining the span error by comparing the first span change with the second

span change;

evaluating the span error;

determining the temperature hysteresis of the span and evaluating the temperature hysteresis of the span, if necessary under the condition that the span error be sufficiently small; and

varying the geometry of the support ring and, if necessary, the decoupling element, and repeating all but the first step, until a suitable geometry is found for a sufficiently small span error and a sufficiently small temperature hysteresis of the span.